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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)	
HIT1P015/HSJ920030118US1	

I hereby certify that this correspondence is being e-filed with the USPTO	Application Number	Filed
on January 30, 2007	10/613,559	07/02/2003
Signature /April Skovmand/	First Named Inventor: Hardayal Singh Gill	
Typed or printed name April Skovmand	Art Unit: 2627	Examiner: Tianjie Chen

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

- ☐ applicant/inventor.
- ☐ assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)
- ☑ attorney or agent of record. Registration number 42,762
- ☐ attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____

/Dominic M. Kotab/
Signature

Dominic M. Kotab
Typed or printed name

408-971-2573
Telephone number

January 30, 2007
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*

☑ *Total of 1 forms are submitted.

Arguments Accompanying Pre-Appeal Brief Request for Review

Submitted below are arguments specifying clear errors in the Examiner's rejections, or the Examiner's omission of one or more essential elements needed for a prima facie rejection.

Claims 1-11, 14-22, 24-26, and 29-34

Claims 1-11, 14-22, 24-26, and 29-34 have been rejected under 35 USC 103(a) as being unpatentable over Parkin (US6153320), in view of Lin et al. (US6127053).

The analysis of obviousness was set forth in *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966). In order to establish a *prima facie* case of obviousness, three basic criteria must be met:

> First, there must be some *suggestion or motivation*, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the teachings of the references. Second, there must be a *reasonable expectation of success*. Finally, the prior art reference or combined references must teach or suggest *all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art*, and not based on applicant's disclosure (*In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991; emphasis added).

Applicant respectfully traverses the rejection as failing the *Graham* test. Specifically, the combination proposed in the rejection fails the first element of the *Graham* test.

With respect to independent Claims 1 and 9, the Examiner has relied on keeper layer 406 in Figure 4a from Lin, in combination with Figure 1 from Parkin, in an attempt to make a prior art showing of applicant's in-stack bias layer for stabilizing the free layer.

Regarding the first element of the *Graham* test, the Examiner has stated that one of ordinary skill in the art would have been motivated to add the keeper layer from Lin (layer 406 in Fig. 4a) into Parkin's device for cancelling the magnetostatic field from

the pinned layer. Applicant respectfully disagrees and traverses the rejection as being improper.

The motivation cited in the rejection is erroneous. The rejection states that "one of ordinary skill in the art would have been motivated to add the keep (biasing) layer to Parkin's device for canceling the magnetostatic filed from the pinned layer." Applicants respectfully disagree. Parkin clearly states that "there is essentially **no net magnetic moment** in the laminated pinned layer 70" (emphasis added). See Col. 4, lines 56-63, Parkin. Therefore, there is no need for, nor reason to add, a keeper layer to provide flux closure for pinned layer 70 to cancel a magnetostatic field of the pinned layer. Thus, the Examiner's stated motivation is erroneous.

Further, if proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Applicant respectfully asserts that in Col. 4, lines 56-63, Parkin teaches that "...because the two films 72, 74 have substantially the same thickness, the magnetic moments of each of the films cancel each other so that there is essentially **no net magnetic moment** in the laminated pinned layer 70" and that "there is essentially no magnetic dipole field generated by the pinned layer 70, and thus **no magnetic field** to affect the direction of the net magnetic moment of the laminated free ferromagnetic layer 90" (emphasis added). Thus, the combination proposed by the Examiner is improper because the addition Lin's keeper layer 406 into Parkin's device would disrupt a system which already has a net magnetic moment of about zero, and in turn, render Parkin's system unstable and therefore unsuitable for its intended purpose, in violation of *In re Gordon*.

For the foregoing reasons, the combination of Parkin and Lin is improper, and therefore fails the first element of the *Graham* test. Thus, reconsideration and allowance of Claims 1 and 9 is respectfully requested.

Claims 2-8, 10-12, 14-17, and 33 depend from Claim 1, and therefore incorporate the limitations of Claim 1. Thus, they are also believed to be allowable over the cited references.

Claim 18 includes an in-stack bias layer as in Claims 1 and 9. Thus, because Parkin fails to teach or suggest a bias layer stabilizing the free layer, and because the proposed combination of Parkin and Lin is improper, Claim 18 is also believed to be allowable over the prior art. Reconsideration and allowance of Claim 18 is respectfully requested.

Claims 19-27, 29-32 and 34 depend from Claim 18, and therefore incorporate the limitations of Claim 18. Thus, they are also believed to be allowable over the cited references.

Claims 13 and 28

Claims 13 and 28 have been rejected under 35 USC 103(a) as being unpatentable over Parkin, in view of Lin, and further in view of Pinarbasi (US2003/0179513).

Specifically, the Examiner has relied on Figure 9 and hard bias layer 140 from Pinarbasi in an attempt to make a prior art showing of applicant's claimed "bias layer formed along a track edge of the head, the bias layer stabilizing the free layer."

With respect to the first element of the *Graham* test, the Examiner has stated that it would have been obvious at the time of the invention for one of ordinary skill in the art to add the bias layer for optimizing the sensor in Pinarbasi. Applicant respectfully disagrees and asserts that in paragraph [0041] Pinarbasi actually appears to teach away from using a bias layer to stabilize the free layer. A *prima facie* case of obviousness may also be rebutted by showing that the art, in any material respect, teaches away from the claimed invention. *In re Geisler*, 116 F.3d 1465, 1471, 43 USPQ2d 1362, 1366 (Fed. Cir. 1997). It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983)

In paragraph [0041] Pinarbasi teaches that "[u]nfortunately, the first and second hard bias layers 140 and 144 in FIG. 9 **do not uniformly stabilize** a free layer within the sensor 74" and that "[h]ard bias layers typically stiffen the magnetic moment of the free layer at end portions of the sensor abutting the hard bias layers so that these

portions are stiff in their response to field signals from the rotating magnetic disk" (emphasis added). Pinarbasi goes on to state that "[w]ith submicron track widths, this loss, which can be 0.1 μm in width at each end of the sensor, is unacceptable" (emphasis added). Thus, the combination proposed by the Examiner is improper because Pinarbasi actually *teaches away* from applicant's claimed bias layer stabilizing the free layer, by specifically disclosing in paragraph [0041] that "the first and second hard bias layers 140 and 144 in FIG. 9 **do not uniformly stabilize** a free layer within the sensor 74" (emphasis added), and that the loss of track width induced by hard bias layers is **unacceptable**. Therefore, the rejection violates the rule of *In re Geisler*. Accordingly, reconsideration and allowance of Claims 13 and 28 is respectfully requested.